CLAIMS

We claim:

1. A recombinant nucleic acid comprising a nucleotide sequence selected from the group consisting of the sequences outlined in Tables 1-10.

2. A host cell comprising the recombinant nucleic acid of claim 1.

3. An expression vector comprising the recombinant nucleic acid according to claim 2.

4. A host cell comprising the expression vector of claim 3.

5. A recombinant protein comprising an amino acid sequence encoded by a nucleic acid sequence comprising a sequence selected from the group consisting of the sequences outlined in Tables 1-10.

6. A method of screening drug candidates comprising:

a) providing a cell that expresses a carcinoma associated (CA) gene comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10 or fragment thereof;

b) adding a drug candidate to said cell; and

c) determining the effect of said drug candidate on the expression of said CA gene.

7. A method according to claim 6 wherein said determining comprises comparing the level of expression in the absence of said drug candidate to the level of expression in the presence of said drug candidate.

8. A method of screening for a bioactive agent capable of binding to an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10, said method comprising:

a) combining said CAP and a candidate bioactive agent; and

b) determining the binding of said candidate agent to said CAP.

9. A method for screening for a bioactive agent capable of modulating the activity of an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10, said method comprising:

a) combining said CAP and a candidate bioactive agent; and

b) determining the effect of said candidate agent on the bioactivity of said CAP.

10. A method of evaluating the effect of a candidate carcinoma drug comprising:

a) administering said drug to a patient;

b) removing a cell sample from said patient; and

c) determining alterations in the expression or activation of a gene comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10.

11. A method of diagnosing carcinoma comprising:

a) determining the expression of one or more genes comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10, in a first tissue type of a first individual; and

b) comparing said expression of said gene(s) from a second normal tissue type from said first individual or a second unaffected individual;

wherein a difference in said expression indicates that the first individual has carcinoma.

12. A method for inhibiting the activity of a CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10, said method comprising binding an inhibitor to said CAP.

13. A method of treating carcinomas comprising administering to a patient an inhibitor of an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10.

14. A method of neutralizing the effect of an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10, comprising contacting an agent specific for said CAP protein with said CAP protein in an amount sufficient to effect neutralization.

15. A polypeptide which specifically binds to a protein encoded by a nucleic acid comprising a nucleic acid selected from the group consisting of the sequences outlined in Tables 1-10.

16. A polypeptide according to claim 15 comprising an antibody which specifically binds to a protein encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-10.

17. A biochip comprising one or more nucleic acid segments selected from the group consisting of a nucleic acid of the sequences outlined in Tables 1-10 or fragments thereof.

18. A method of diagnosing carcinoma or a propensity to carcinoma by sequencing at least one CA gene of an individual.

19. A method of determining CA gene copy number comprising adding an CA gene probe to a sample of genomic DNA from an individual under conditions suitable for hybridization.